CLAIMS

WHAT IS CLAIMED IS:

1. An xDSL modem used for digital communication through a subscriber line connecting a local switch and a customer premises equipment, and which includes a digital transmitting unit for performing the digital communication using a data signal, the data signal being separated by a splitter from an analog control signal and a speech signal used for a telephone communication by use of an analog transmitting unit, the xDSL modem comprising:

an evaluating unit for evaluating, prior to a start of a provision of a broadband communication service, a transmission characteristic of said subscriber line based on a reception result of a signal transmitted from said local switch through said subscriber line; and

a reporting unit for sending out said transmission characteristic obtained by said evaluating unit to a network through said analog transmitting unit.

2. The xDSL modem according to claim 1,

wherein said evaluating unit includes:

a requiring unit for sending out a predetermined requiring signal to the network through the analog transmitting unit; and

an analyzing unit for analyzing a reception result of an analog signal according to receipt of a response signal sent back from a provider offering a broadband communication service in response to said requiring signal, the analog signal being generated by said local switch directly connected to said xDSL modem and being transmitted through said subscriber line, and for obtaining an evaluation barometer indicating a transmission characteristic of said subscriber line.

3. The xDSL modem according to claim 2,

wherein said analyzing unit includes:

a level measuring unit for measuring a reception level of one of a secondary dial tone

and a ringing signal which are transmitted from said local switch; and

a signal loss calculating unit for calculating a transmission loss by a subscriber line between the local switch and the customer premises equipment based on said reception level, and for outputting the transmission loss as a barometer for evaluating a transmission characteristic of said subscriber line.

4. The xDSL modem according to claim 2,

wherein said analyzing unit includes:

a signal level measuring unit for measuring a reception level of a modulated-analog signal transmitted from the local switch in response to a predetermined modulated signal in conformity with a recommendation V. 90 by ITU-T; and

a signal loss calculating unit for calculating a transmission loss by said subscriber line between the local switch and the xDSL modem based on said reception level, and for outputting the transmission loss as a barometer for evaluating a line characteristic of said subscriber line.

5. The xDSL modem according to claim 1,

wherein said evaluating unit includes:

a current/voltage measuring unit for measuring one of a line current and a voltage, the line current flowing through a subscriber line between the local switch and the xDSL modem in an off-hook state and the voltage between two copper wires forming said subscriber line in a state where said line current flows therethrough; and

a current loss calculating unit for calculating a transmission loss by said subscriber line based on one of an obtained value of the line current and an obtained value of the voltage, and for outputting the transmission loss as a barometer for evaluating a transmission characteristic of said subscriber line.

6. The xDSL modem according to claim 1,

wherein said evaluating unit includes:

a noise detecting unit for detecting noises having a reception level of a predetermined threshold value or more, from a signal which is input to the digital transmitting unit provided in the xDSL modem, the signal being separated from an analog signal by the splitter; and

a periodicity examining unit for examining a periodicity of the noises detected by said noise-detecting unit and for outputting an obtained examination result as a barometer for evaluating a transmission characteristic of said subscriber line.